VERMONT

State of Vermont
Department of Environmental Conservation
Watershed Management Division
One National Life Drive, Main Bldg., 2nd Floor
Montpelier VT 05620-3522

Agency of Natural Resources

June 10, 2015

Mr. Charles Hafter
City of South Burlington
537 Dorset Street
South Burlington, VT 05403

Brian Osborne
Town of Colchester
Box 55
Colchester, VT 05446

Subject: Performance Audit Inspection
South Burlington/Airport Parkway Wastewater Treatment Facility
Vermont Discharge Permit # 3-1278

Dear Mr. Hafter and Osborne

On May 5, 2015, I conducted a performance audit inspection of the South Burlington/Airport Parkway Wastewater Treatment Facility. This evaluation is designed to determine if basic sampling and analytical requirements are being satisfied at the facility. A brief walk through of the facility is performed to determine the visual appearance of the effluent and to provide a check of equipment and facility condition.

I would like to thank your chief operator, Robert Baillargeon and operator/lab technician Jennifer Garrison, for assisting me with this evaluation. The evaluation proceeded smoothly.

Attached is a brief 4 page report outlining the inspection findings.

Overall the facility appeared to be operating very well. The effluent appeared to be of excellent quality. Please note that I did not recommend a follow up inspection of the facility. I am extremely confident that Mr. Baillargeon and Jennifer Garrison will address the few comments and suggestions for improvement in a timely manner. The South Burlington facility is extremely well run. They have an excellent crew and I am

completely confident that the results generated at the facility are accurate and honestly reported. I commend all of the operators and the city personnel associated with the facility for their fine work and dedication.

Please pay particular attention to the "Comments and Concerns" section of the attached report. In that section, required and recommended corrective actions are described.

There is no need to send a written response describing corrective actions taken to this office but I would appreciate a copy of the revised SOP for pH probe maintenance.

Again, I thank Mr. Baillargeon and Ms. Garrison for taking the time to meet with me. It is always a pleasure working with the S. Burlington crew.

If you have any questions regarding this evaluation or any other laboratory related matter, please don't hesitate to contact me at 490-6186.

Sincerely,

Andrew Fish

Andrew D Fish CET
Wastewater Laboratory Specialist

Attachment: Reconnaissance Performance Audit Inspection
c.c.
Andre Spewjewski, US EPA Region 1
Ernest Kelley, Manager WWMD
Robert Baillargeon, Chief Operator
Compliance file

PERFORMANCE AUDIT INSPECTION

FACILITY: S. Burlington Airport Parkway WWTF

DATE OF INSPECTION: May 5, 2015

CHIEF OPERATOR: Robert Baillargeon **CERTIFICATION**: Grade 5DM #461

OPERATOR(S):	Jennifer Garrison	**CERTIFICATION(S)**: Grade 3DM #1720
	Kevin McGlaughlin	Grade 5DM #1295
	Will Sheffer	Grade 3DM #1549
	James Goodyear	Grade 1DMP #1713

TRAINING: Robert, Jennifer and Kevin have successfully completed the 42 hour wastewater laboratory course offered by the State. Robert and Kevin hold NEWEA Grade I Laboratory Analyst Certification. Jennifer holds Grade 2 NEWEA Certification

SAMPLING:

LOCATIONS ADEQUATE? Yes. Influent samples are collected at the headworks, from the influent channel just prior to the fine screen. Composite samples are collected via Hach Sigma 900 MAX refrigerated automatic sampler. Grab samples are collected via a wooded pole with plastic jug attached.

Effluent samples are collected from the effluent channel downstream of ultra violet disinfection and filtration. Composite samples are collected via a Hach Sigma 900 MAX refrigerated automatic sampler. Grab samples are collected via a metal pole with plastic jug attached. Samples collected for analysis of Escherichia Coli are collected via a designated metal pole with sterile sample bottle attached with a rubber band.

REPRESENTATIVE OF ACTUAL CONDITIONS? Yes.

***PROPERLY FLOW PROPORTIONED**? Yes. Influent and effluent samples are collected at a rate of 250 milliliters per X pulses. Please see notes in the "Comments" section regarding reducing sample volume during high flows.

PROPER CONTAINERS? Yes.

PROPERLY PRESERVED? Yes. All samples are maintained at 6° C. A sterile bottle

is used for collection of the Escherichia Coli sample. No sodium thiosulfate is required since ultra violet disinfection is used.

Sixteen ounce plastic bottles containing sufficient volume of sulfuric acid, supplied by Endyne lab are used for collection of the Total Kjeldahl Nitrogen sample.

The Total Phosphorus analysis is run soon after the last discrete sample of the composite is collected. Therefore acidification of the sample is not required.

PROPER HOLD TIMES OBSERVED? Yes. All analyses are performed well within the allowable hold times.

PROPER DOCUMENTATION? Yes. Documentation is very good.

EQUIPMENT:

ADEQUATE FOR ANALYSES PERFORMED? Yes. All equipment used in analysis of NPDES required analyses is state of the art and in excellent condition.

pH - A Fischer Scientific Accumet model AR25 with Accumet refillable type glass probe is used for electrometric analysis of pH.

Turbidity - A Fischer Scientific Micro 100 Turbidimeter is used for analysis of Turbidity.

Total Suspended Solids – Whatman 934AH 90 millimeter glass fiber filters are used in conjunction with 90 millimeter plastic funnel, four Liter sidearm flask with 1 liter trap and Welch vacuum pump for filtering Total Suspended Solids samples. Samples and filters are dried in a Yamato model DX402C drying oven and are weighed using an Ohaus Explorer model ET 2140 analytical balance.

Biochemical Oxygen Demand- A Hach model 400 Dissolved Oxygen meter with Hach Luminescent Dissolved Oxygen probe is used for determining Biochemical Oxygen Demand. Samples are incubated in a Fischer Scientific low temperature digital incubator.

Escherichia Coli. – The Colilert 24 method is used for analysis of Escherichia Coli. using a 51 well Quanti tray, Quanti tray sealer model 2X. Samples are incubated in a Binder brand 35° C incubator. A Model UVL 56 Black Ray long wave wand is used to determine sample fluorescence.

Total Phosphorus – The Hach Test 'n' Tube method is used for analysis of Total Phosphorus. Hach TNT 843 tubes are used for digestion of sample in a Hach DRB200 reactor. Results are determined with a Hach DR2900 spectrophotometer.

***MAINTENANCE AND CALIBRATION ADEQUATE**? Please refer to notes in the "Comments" section regarding suggestions for improved maintenance of the pH probe.

DOCUMENTED? Yes

ANALYSES:

PARAMETERS PERFORMED ON SITE: pH, Turbidity, Settleable Solids, Total Suspended Solids, Biochemical Oxygen Demand, and Escherichia Coli. and Total Phosphorus

PARAMETERS PERFORMED OFF SITE: Total Kjeldahl Nitrogen, Total Copper and Total Zinc

NAME OF CONTRACT LABORATORY USED: Endyne

QC MANUAL? Yes. There is an excellent QC manual available at the facility.

PARTICIPATION IN BLIND SAMPLE PROGRAM? Yes. Proficiency samples for all NPDES required analyses performed on site at the South Burlington facility are procured from Environmental Resource Associates annually.

FACILITY INSPECTION

MAJOR EQUIPMENT OPERATIVE? Yes. All equipment was operating well at the time this evaluation was performed. They had experienced some problems with digester samples earlier but this is thought to be due to lab error.

VISUAL APPEARANCE OF EFFLUENT: Excellent!!

FLOW CHECK ADEQUATE? Yes. A target baffle is used to determine flow meter accuracy.

CONCERNS AND COMMENTS:

1. I would like to express my respect for and appreciation of the dedicated professionals operating the South Burlington WWTF. The facility is one of, if not THE, most sophisticated facility in the state. The operators are well trained and very good at their jobs. The city recognizes the importance of the facility and appears to respond to financial and other needs in a timely manner. I very much appreciate this good relationship and dedicated service. It is always a great pleasure to work with the South Burlington WWTF personnel.

2. Regarding maintenance of the pH meter and probe I offer the following:

   Be sure to clean the reference junction carefully and thoroughly each time the standardization is performed. If sludge and/or debris builds up on the junction a soft bristled tooth brush can be used to remove the material. Be careful not to scratch the glass bulb at the end of the probe.

   The "fill hole" on the side of the probe must be opened when the probe is in use and closed when not in use. This allows proper flow of the electrolyte and eliminates crystallization near the hole.

   I recommend waiting approximately 15 minutes after turning on the pH meter before standardizing. This will allow the probe to polarize and may improve performance.

3. A minimum 10% replication/duplication rate must be established for all NPDES permit required analyses. Typically "daily" analyses are replicated/duplicated once per week as opposed to tracking a "one every 10 days" schedule.

RECOMMEND FOLLOW UP INSPECTION? No. I am extremely confident that results generated at the South Burlington are accurate and honestly recorded. This facility is very well run and any problems are quickly communicated to the State when necessary. KEEP UP THE GOOD WORK!!!

OVERALL RATING: 3 (based on a rating system of 1-3)

INSPECTED BY: Andrew Fish

Andrew Fish

Wastewater Laboratory Spec.